



**WETLAND DELINEATION REPORT
FOR
Block 229, Lot 8, Lot 10A and Lot 10B
Borough of Wood-Ridge
and
Block 84, Lot 5
Borough of Carlstadt, Bergen County, New Jersey
20 November 1997**

Prepared for:

**PTI Environmental Services
460 Totten Pond Road
Waltham, MA**

Job No. 97196

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INTRODUCTION

This report provides the delineation and description of wetland areas on the Ventron-/Velsicol (Wood-Ridge) National Priorities List (NPL) Site. The site is located on the west side Berry's Creek and bounded on the north by Ethel Boulevard in Wood-Ridge, Bergen County, New Jersey (Figures 1, 2 & 3). The wetland delineation was performed at the request of PTI Environmental Services.

The wetland delineation was performed on 22 May 1997. The U.S Army Corps of Engineers, New York District, will be requested to verify the extent of wetland acreage on the site and to confirm their jurisdictional limits under the Clean Water Act.

SITE DESCRIPTION

The site, comprising approximately 40 acres, is located on Block 229, Lot 8, Lot 10A and 10B in the Borough of Wood-Ridge and Block 84, Lot 5 in the Borough of Carlstadt, Bergen County, New Jersey (Figure 3). Most of the site has been altered in the past. There are two active warehouses along Ethel Boulevard in the northwestern section and a fenced area in the eastern section of the site. There is a wooded area in the fenced section of the site and with an extensive wetland system associated with the Berry's Creek (see Photographs). There is a tide gate constructed across Berry's Creek. The tidal wetland system is dominated by *Phragmites australis* (Common Reed) below the tide gate. The elevations on the site range from 12.6 feet on a high point in the eastern section to below 0.0 feet associated with Berry's Creek (see Wetland Location Map for Wood-Ridge Site).

METHODS

Wetlands are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas" (Federal Register, July 19, 1977). Wetlands are determined using the multi-parameter approach, meaning that three parameters, hydric soils, hydrophytic vegetation, and wetland hydrology, must be present in order to classify an area as wetlands. Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper horizons (Soil Conservation Service 1987). Hydrophytic vegetation refers to plant species which are specifically adapted to growth and reproduction under periodically saturated root zone conditions during at least a portion of the growing season (N.J.A.C. 7:7A-1.4). Wetland hydrology is the sum total of wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation (Environmental Laboratory, 1987). Wetlands can only be determined by a site inspection using the multi-parameter approach as promulgated by the Federal Interagency Committee for Wetland Delineation (1989).

Wetlands are classified by the United States Fish and Wildlife Service system (Cowardin, et al. 1979). The objectives of the system are: (1) to develop ecologically similar habitat units; (2) to arrange these units in a system that would facilitate resource management decisions; (3) to furnish units for inventory and mapping; and (4) to provide uniformity in concept and terminology throughout the country (Cowardin, et al. 1979).

Vegetation

Hydrophytic vegetation includes any macroscopic plant life growing in water or on a substrate that is at least periodically deficient of oxygen as a result of excessive water content. The term prevalence of hydrophytic vegetation means that the vegetational association is dominated by hydrophytic species. The United States Fish and Wildlife Service has prepared a comprehensive list of the Nation's hydrophytes to classify the species in their relationship to wetlands (see Table 1 for their description). Vegetation is the most conspicuous component of wetlands identification.

The hydrophytic vegetation criterion is evaluated as follows (FICWD 1989):

1. An area has hydrophytic vegetation when, under normal circumstances:
 - a) More than 50 percent of the composition of the dominant species from all strata are obligate wetland (OBL), facultative wetlands (FACW), and/or facultative (FAC) species, or
 - b) A frequency analysis of all species within the community yields a prevalence index value of less than 3.0 (where OBL = 1.0, FACW = 2.0, FAC = 3.0, FACU = 4.0, and UPL = 5.0). CAUTION: When a plant community has less than or equal to 50 percent of the dominant species from all strata represented by OBL, FACW, and/or FAC species, or a frequency analysis of all species with the community yields a prevalence index value of greater than or equal to 3.0, and hydric soils and wetland hydrology are present, the area also has hydrophytic vegetation. (Note: These areas are considered problem area wetlands.)

2. For each stratum (e.g. tree, shrub, and herb) in the plant community, dominant species are the species (when ranked in descending order of abundance and cumulatively totaled) that immediately exceed 50 percent of the total dominance measure (e.g., basal area or aerial coverage) for the stratum, plus any additional species comprising 20 percent or more of the total dominance measure for the stratum. All dominant species are treated equally in determining the presence of hydrophytic vegetation.

Soils

The soil parameter is used in the evaluation of wetlands to determine the presence of hydric soils. A hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (SCS 1987).

Determination of the presence of hydric soils is made using the following criteria:

1. All Histosols except Folists, or
2. Soils in Aquic suborders, Aquic subgroups, Albolls suborder, Salorthids great group, or Pell great groups of Vertisols that are:
 - a. somewhat poorly drained and have water table less than 0.5 feet from the surface at some time during the growing season, or
 - b. poorly drained or very poorly drained and have either:
 - (1) water table at less than 1.0 feet from the surface at some time during the growing season if permeability is equal to greater than 6.0 inch/hour in all layers within 20 inches, or
 - (2) water table at less than 1.5 feet from the surface at some during the growing season if permeability is less than 6.0 in/hr. in any layer within 20 inches, or
3. Soils that are ponded for long duration or very long duration during the growing season, or
4. Soils that are frequently flooded for long duration or very long duration during the growing season.

The determination of soil series on a site can only be accomplished through a field inspection and comparison of the field soil profiles with those described by the Soil Conservation Service. Soils were field evaluated to determine the presence of any hydric soils on the site. Soils profiles were determined to a depth of 3 feet using a 3.5 inch soil auger. Soil colors were determined using Munsell Soil Colors Charts (Kollmorgen Corp. 1975). See Appendix I for soil logs recorded on the project site by Shisler Environmental Consultants, Inc.

Hydrology

Wetland hydrology is defined, in general terms, as permanent or periodic inundation or prolonged soil saturation sufficient to create anaerobic conditions in the soil (FICWD 1989). The driving force in the creation of wetlands is "wetland hydrology." It is the sum total of wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation (Environmental Laboratory 1987). This inundation or saturation can come from many sources, such as direct precipitation, surface run-off, ground water, tidal influence, and overland flooding (Sipple 1988).

The wetland hydrology criterion is defined by FICWD (1989) as follows: An area demonstrates wetland hydrology when saturated to the surface or inundated at some point in time during an average rain-fall year, as defined below:

1. Saturation to the surface normally occurs when soils in the following natural drainage classes meet the following conditions:
 - a. In somewhat poorly drained mineral soils, the water table is less than 0.5 feet from the surface for usually one week or more during the growing season; or
 - b. In low permeability (< 6.0 inches/hour), poorly drained or very poorly drained mineral soils, the water table is less than 1.5 feet from the surface for usually one week or more during the growing season; or
 - c. In more permeable (≥ 6.0 inches/hour), poorly drained or very poorly drained mineral soils, the water table is less than 1.0 feet from the surface for usually one week or more during the growing season; or
 - d. In poorly drained or very poorly drained organic soils, the water table is usually at a depth where saturation to the surface occurs more than rarely. (Note: Organic soils that are cropped are often drained, yet the water table is closely managed to minimize oxidation of organic matter; these soils often retain their hydric characteristics and if so, meet the wetland hydrology criterion.)
2. An area is inundated at some time if ponded or frequently flooded with surface water for one week or more during the growing season.

Site Inspection

The site was field inspected on 22 May 1997 by examining the entire site for changes in vegetational associations and topography that might indicate the potential presence of wetlands. Soil borings were performed if vegetation and hydrology suggested wetland conditions. The wetland boundary was flagged with pink glo flagging at approximately 75 to 100 foot intervals. Locations of the logged soil borings were marked with orange glo flagging. Appendix I presents the soil boring log sheets. Presence or absence of wetlands was determined using the multi-parameter approach. The Wetlands Location Map for the Wood-Ridge Site in the attached pocket shows the surveyed wetland boundary, soil boring locations, and photograph locations. Where no flag numbers are shown along the wetland border, the delineation extends to the property line. Wetlands were delineated by Joseph K. Shisler, Ph.D. (see Appendix II for resume).

RESULTS

Federal and State Wetlands Mapping

The U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) for New Jersey (completed during 1976 and 1977) maps the wetland system associated with Berry's Creek as E2EM (estuarine intertidal emergent) and Berry's Creek as E1OW (estuarine subtidal, open water with unknown bottom) on their Weehawken, N.J.-N.Y. map (Figure 4).

The New Jersey Freshwater Wetland Map for the area (Weehawken, NW 42-1) maps the wetland system as 187 E2EM1P (Estuarine intertidal persistent emergent wetland with an irregular tidal water regime) and 424 UWL (Upper Wetland limit) along Berry's Creek and the intermittent stream corridor (Figure 5). The upper wetland limit is from the New Jersey Tidal Wetland maps for the area. The open water corridor that occurs south of the lot line is mapped as 443 R4SB5x (Riverine system with an intermittent mesohaline tidal system that has been excavated) (see Photograph 8).

The NWI and New Jersey Wetland maps should be used as a guide in wetland delineation and only through field inspection using the federal method for determining jurisdictional wetlands can actual jurisdictional limits be determined. Verification of these limits by responsible federal and/or state agency is the suitable procedure.

Vegetation

Most of the site has been altered in the past with the wooded section dominated by an upland community of *Ailanthus altissima* (Tree of Heaven, NL), *Robinia pseudo-acacia* (Black Locust, FACU-), *Populus deltoides* (Eastern Cottonwood, FAC), *Prunus serotina* (Black Cherry, FACU), and *Acer rubrum* (Red Maple, FAC) with *Rubus allegheniensis* (Allegheny Blackberry, FACU-), *Rhus copallinum* (Dwarf Sumac, NL), *Polygonum cuspidatum* (Japanese Knotweed, FACU), *Lonicera japonica* (Japanese Honeysuckle, FAC-) and *Rosa multiflora* (Multiflora Rose, FACU) (see Photographs 1 and 2). The area is dominated by a typical upland community on a disturbed area.

Upstream from the Berry's Creek tide gate is a narrow intertidal emergent system dominated by *Peltandra virginica* (Arrow Arum, OBL), *Pontederia cordata* (Pickerel-weed, OBL) and *Impatiens capensis* (Jewelweed, FACW) (see Photographs 3 and 4). The vegetation along Berry's Creek is dominated by *Acer rubrum* (Red Maple, FAC), *Acer saccharinum* (Silver Maple, FACW), *Salix nigra* (Black Willow, FACW+), *Viburnum dentatum* (Arrow-wood, FAC), *Sambucus canadensis* (Common Elderberry, FACW-) which drop off into a dense *Phragmites australis* (Common Reed, FACW) system (see Photographs).

After site inspection, Shisler Environmental Consultants, Inc. concluded that most of the vegetation has been altered in the past and the vegetation along the Berry's Creek is dominated by *P. australis* and the vegetation on the site could be used in determining the wetland boundary. Hydrophytic vegetation was found associated with the intermittent stream corridors which would meet the criteria for hydric conditions as promulgated by the Federal Interagency Committee for Wetland Delineation (1989).

Soils

The U.S. Department of Agriculture Soil Conservation Service published a preliminary Bergen County Soil Survey in 1990. The soils for the site are mapped as Urban Land (Ur) and Udothents, organic substratum-Urban land complex (Uc), and Udorthents, wet substratum (Ue) (see Figure 6).

The Udothents, organic substratum-Urban land complex is located on low lying marine and estuarine deposits and in the upland areas. These areas have been filled to variable depths and smoothed, and partially paved. Most of the areas are presumed to have been deep to shallow very poorly drained organic soils and subject to daily tidal flooding, or prolonged ponding. Fill material is presumed to consist of stones, boulders, rubble, and variable amounts of soil and non-soil material.

The Udorthents, wet substratum is on upland stream terraces, drainageways, marine and estuarine deposits, and flood plains. The unit has been filled and smoothed or otherwise extensively disturbed to a depth of 3 feet or more. Most areas are presumed to have been deep, somewhat poorly drained to very poorly drained soils and subject to flooding or prolonged ponding. Fill material generally consists of a mixture of soil material with variable amounts of stones, boulders, and rubble. Silty and sandy soil dredgings are commonly found near water bodies.

The field inspection verified the soils on the site as filled material in the upland areas, which drop off steeply into the Berry's Creek and the intermittent stream corridor (see Photographs 3 and 6).

After site inspection, Shisler Environmental Consultants, Inc. concluded that the soils on the site have been altered in the past but can be used in the determination of wetlands. Hydric soils were found along the Berry's Creek and intermittent stream corridor which would meet the criteria for hydric conditions as promulgated by the Federal Interagency Committee for Wetland Delineation (1989).

Hydrology

The site is located adjacent to Berry's Creek and an unnamed intermittent tributary to Berry's Creek. Berry's Creek is a tributary in the Hackensack River Watershed. Berry's Creek is a blue line on the Weehawken, NJ-NY Geological Survey Quadrangle and is mapped on the Bergen County Soils Map and the New Jersey Freshwater Wetland map (Figures 2, 5, and 6). Site hydrology is dominated by tides up to the Berry's Creek tide gate.

A small hydrologically isolated wetland was identified in the center of the site (W-90 through W-95 on Plate 1). The water is from periodic rainfall that accumulates in the depression. The wetland corridor along the fence (W-61 through W-70 on Plate 1) receives runoff from between the warehouses and the adjacent property. The wetland corridor along this fence is connected by a pipe to the wetlands in the southern portion of the site.

After the detailed site inspection, Shisler Environmental Consultants, Inc. concluded that the dominant hydrology on the site is the tidal movement of Berry's Creek and that the tidal corridor south of the lot line is a wetland boundary where the hydrology parameters as set forth by the Federal Interagency Committee for Wetland Delineation (1989) have been met.

SUMMARY

The project site in Wood-Ridge and Carlstadt, Bergen County, New Jersey was found to support a wetland community associated with Berry's Creek and the intermittent stream corridor. Based on the review of available published information on the project site and a detailed inspection using the three-parameter methodology for the delineation of wetlands, it is Shisler Environmental Consultants Inc.'s opinion that wetlands are found on the site as indicated on the attached Wetlands Location Map for the Wood-Ridge Site.

The site is not listed as a priority wetland by the U.S. Environmental Protection Agency in their publication **Priority Wetlands List for the State of New Jersey**. Neither of the Boroughs are identified by the Program as an area that has documented records for *Helonias bullata* (Swamp Pink, OBL) which is a federally threatened species [N.J.A.C. 9.5(a)2iii(2)].

Berry's Creek is classified as FW2-NT/SE (non-trout waters/saline estuarine waters) in the area of the project. The wetlands on most of the site area are tidal wetlands, except for the small isolated wetland and the drainage swale along the western boundary.

Final determination of the jurisdictional limits must be made by the U.S. Army Corps of Engineers, New York District.

LITERATURE CITED

Cowardin, L.M., V. Carter, F.C. Golet and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. FWS/OBS-79/31, US Fish and Wildlife Service, Office of Biological Services, Washington, DC.

Federal Interagency Committee for Wetland Delineation. 1989 Federal manual for identifying and delineating jurisdictional wetlands. U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S.D.A. Soil Conservation Service. Cooperative Technical Publication. Washington, D.C. 107 pp. + app.

Kollmorgen Corporation. 1975. Munsell Soil Color Charts. Baltimore, MD.

Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Miss.

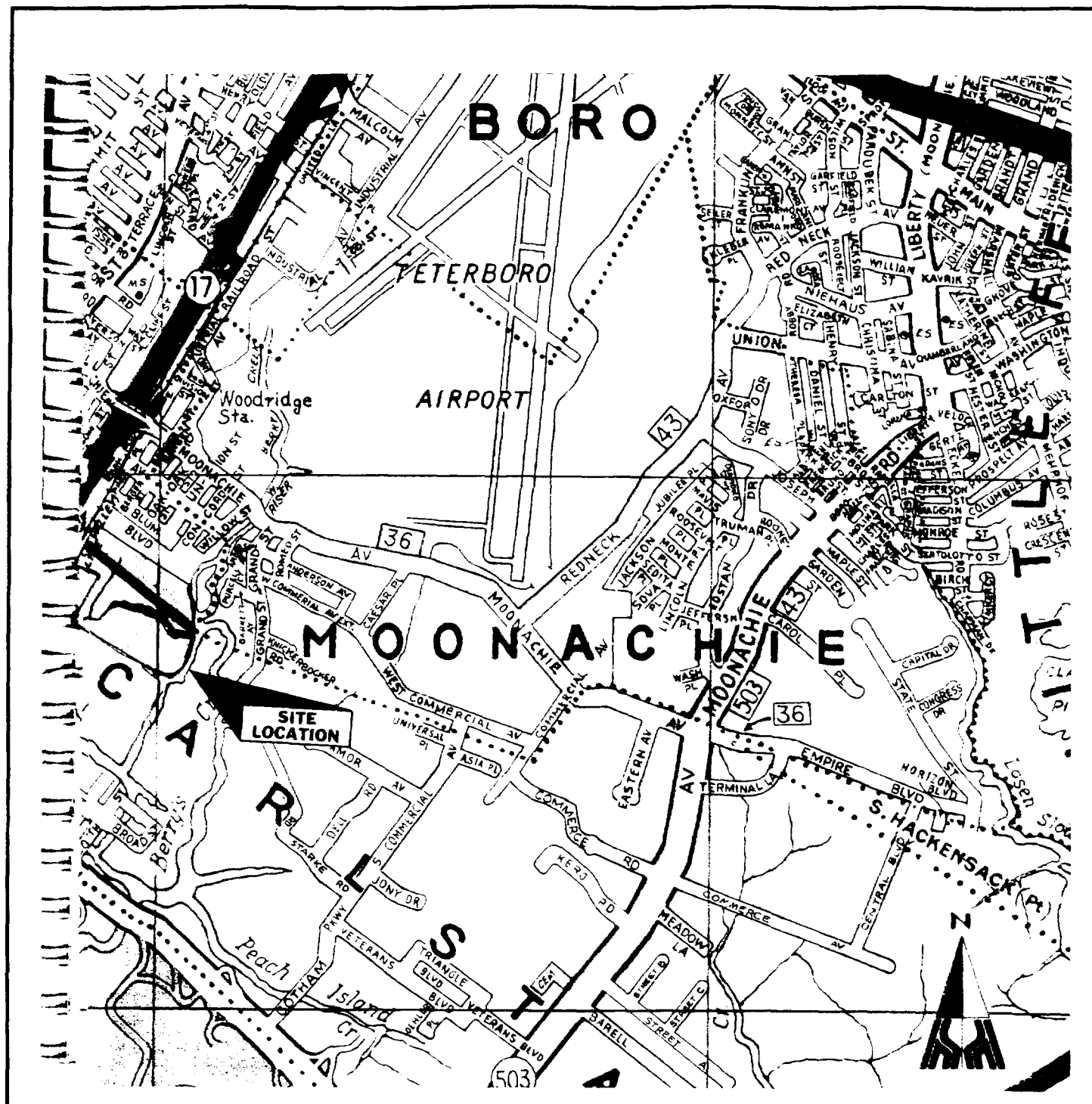
Reed, P.B., Jr. 1986. Wetland Plants of the State of New Jersey 1986. U.S.D.I. Fish and Wildlife Service. WELUT-86/W12.30.

Sipple, W.S. 1987. Wetland identification and delineation manual. Office of Wetlands Protection, U.S. Environmental Protection Agency, Washington, D.C.

Tiner, R.W., Jr. 1985. Wetlands of New Jersey. U.S. Fish and Wildlife Service, National Wetlands Inventory, Newton Corner, MA. 117pp.

U.S.D.A. Soil Conservation Service. 1987. Hydric soils of the United States. Washington, DC.

U.S.D.A. 1990. Soil Survey of Bergen County, New Jersey. USDA, Washington, DC.



SOURCE:

Hagstrom Bergen/Passaic/Rockland Counties Atlas (1992)

SCALE:

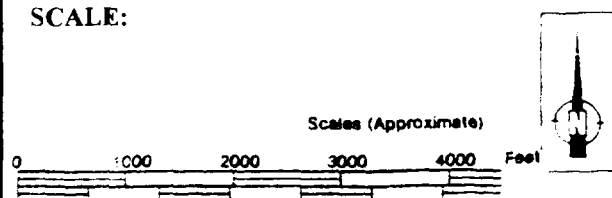


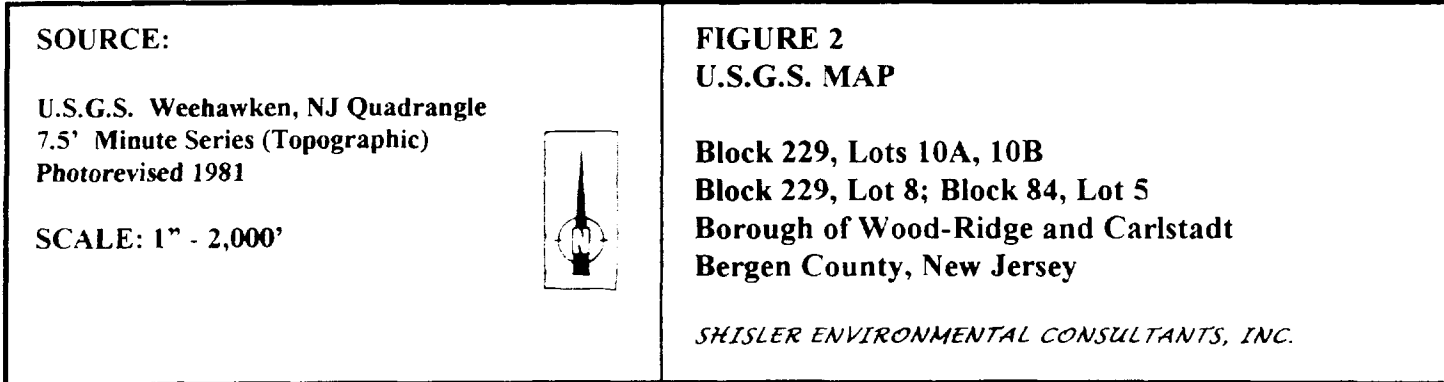
FIGURE 1

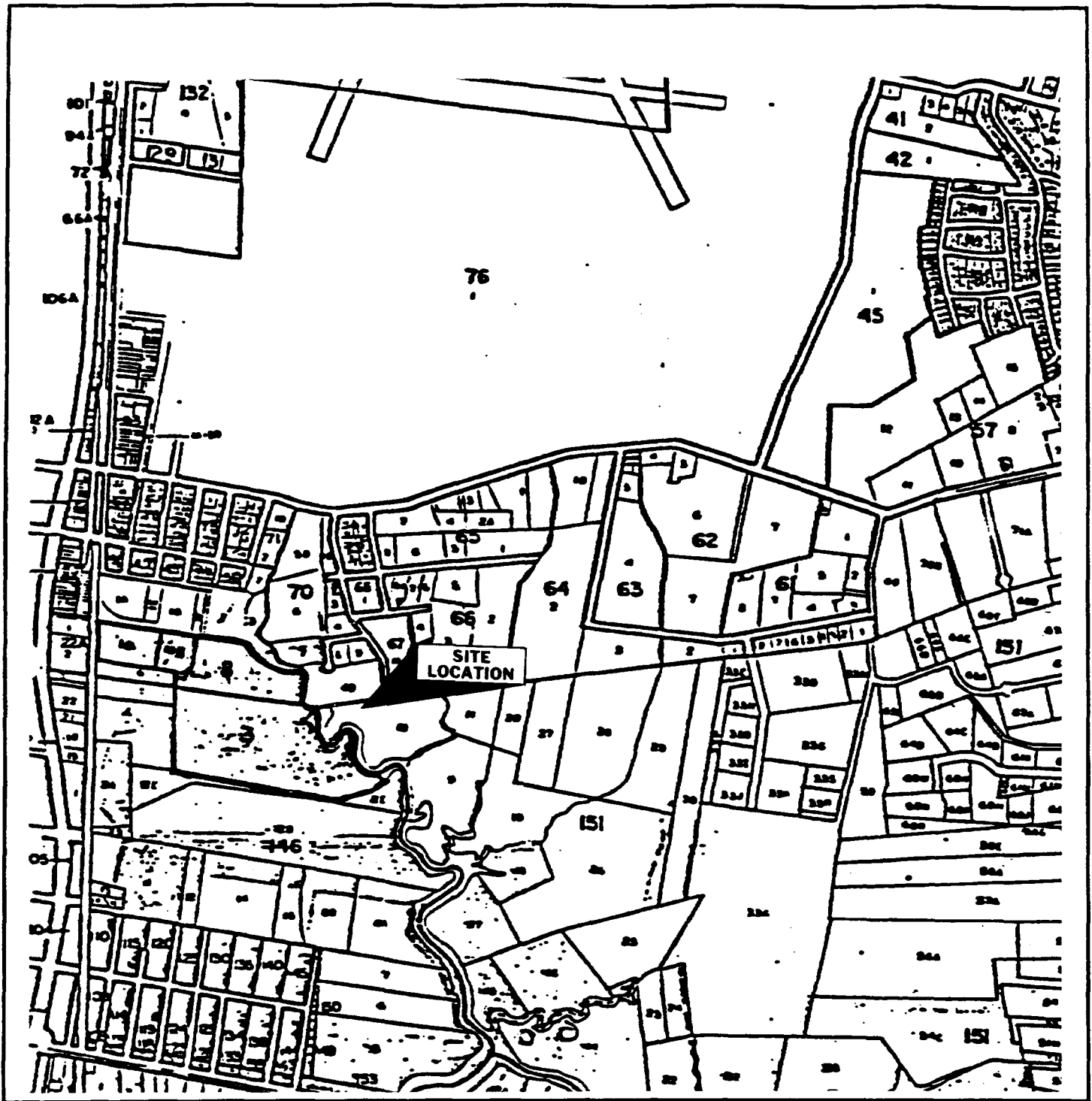
SITE VICINITY MAP

Block 229, Lots 10A, 10B
 Block 229, Lot 8; Block 84, Lot 5
 Borough of Wood-Ridge and Carlstadt
 Bergen County, New Jersey

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SOURCE:
Borough Tax Office's

SCALE:

Not to Scale

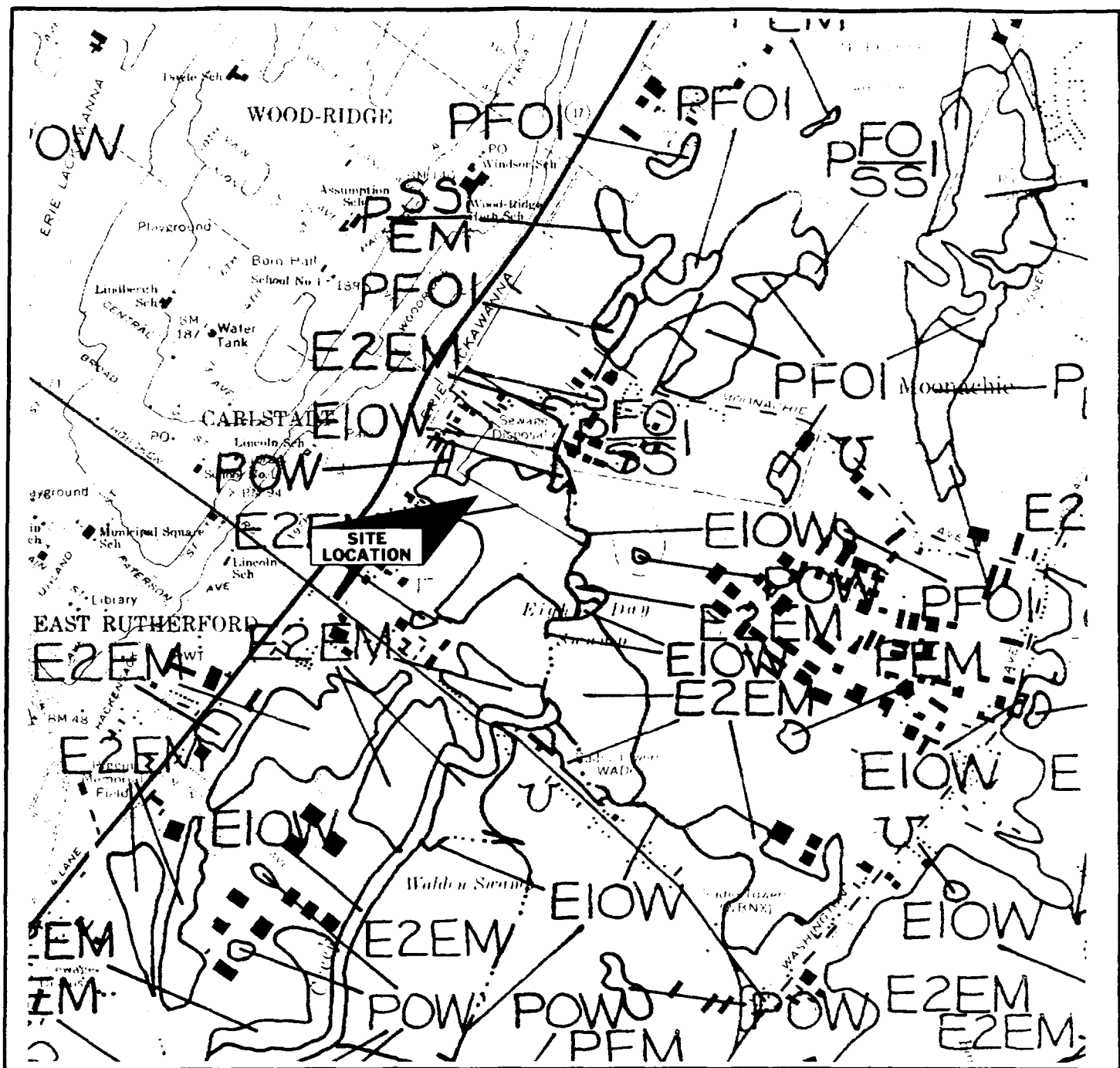


FIGURE 3 TAX MAP

Block 229, Lots 10A, 10B
Block 229, Lot 8; Block 84, Lot 5
Borough of Wood-Ridge and Carlstadt
Bergen County, New Jersey

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SOURCE:

U.S. Department of the Interior, Fish & Wildlife Service
National Wetland Inventory (NWI) Map, Weehawken, NJ-NY
NW (42-1) 1986

LEGEND:

PFO1 (palustrine forested broad leaved deciduous)
PFO1 (palustrine forested broad leaved deciduous)
PSS1/EM (palustrine scrub-shrub broad-leaved deciduous/emergent)

FIGURE 4

NWI MAP

Block 229, Lots 10A, 10B
Block 229, Lot 8; Block 84, Lot 5
Borough of Wood-Ridge and Carlstadt
Bergen County, New Jersey



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825930014



SOURCE:

Freshwater Wetlands Map, State of NJ
Weehawken, NJ-NY NW (42-1) 1986

LEGEND:

424 UWL (Upland, wetland line)

187 E2EMIP (Estuarine Intertidal Emergent, Persistent
with an Irregular Water Regime)



SCALE: 1" - 1,000'

FIGURE 5

N.J. FRESHWATER WETLANDS MAP

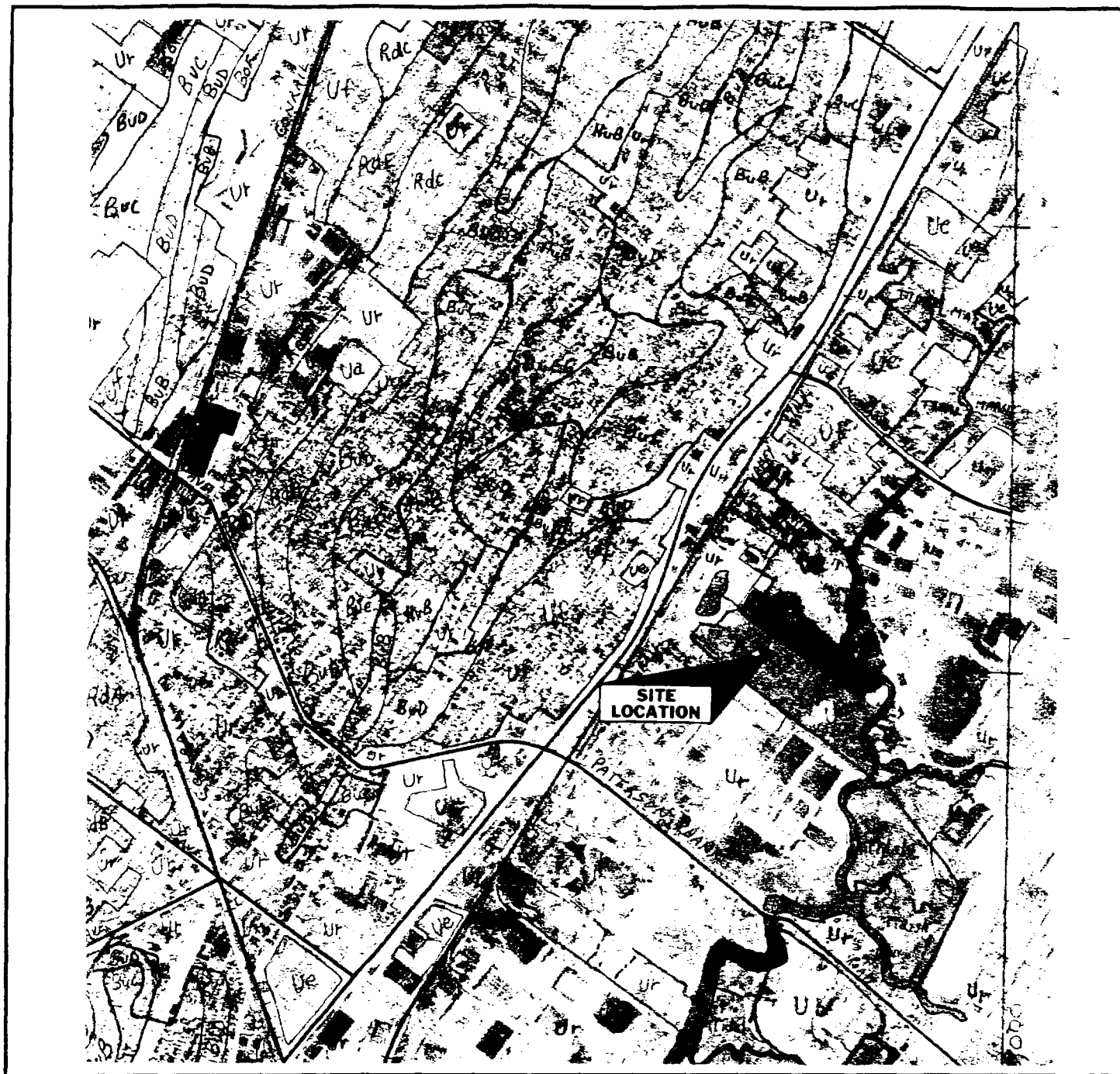
Block 229, Lots 10A, 10B

Block 229, Lot 8; Block 84, Lot 5

**Borough of Wood-Ridge and Carlstadt
Bergen County, New Jersey**

SHISLER ENVIRONMENTAL CONSULTANTS, INC.

825930015



SOURCE:

Interim Soil Survey of Bergen County, NJ (1990). Atlas Sheet #19

LEGEND:

- (Ue) Udorthents, wet substratum
- (Uc) Udothents, organic substratum-Urban land complex
- (Ur) Urban land



SCALE: 1" = 1667'

**FIGURE 6
SOILS MAP**

**Block 229, Lots 10A, 10B
Block 229, Lot 8; Block 84, Lot 5
Borough of Wood-Ridge and Carlstadt
Bergen County, New Jersey**

SHISLER ENVIRONMENTAL CONSULTANTS, INC.

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Table 1. Major plant species identified on the site during wetland delineation, May 1995.

Scientific Name (Common Name, Indicator Status)

Acer rubrum (Red Maple, FAC)
Acer saccharinum (Silver Maple, FACW)
Baccharis halimifolia (Groundsel-tree, FACW)
Elaeagnus angustifolia (Russian Olive, FACU)
Impatiens capensis (Jewelweed, FACW)
Juniperus virginiana (Eastern Red Cedar, FACU)
Liquidambar styraciflua (Sweet Gum, FAC)
Lonicera japonica Japanese Honeysuckle, FAC-)
Nyssa sylvatica (Black-Gum, FAC)
Onoclea sensibilis (Sensitive Fern, FACW)
Peltandra virginica (Arrow Arum, OBL)
Phragmites australis (Common Reed, FACW)
Polygonum cuspidatum (Japanese Knotweed, FACU)
Polygonum pennsylvanicum (Pennsylvania Smartweed, FACW)
Pontederia cordata (Pickerel-weed, OBL)
Populus deltoides (Eastern Cottonwood, FAC)
Quercus palustris (Pin Oak, FACW)
Rhus copallinum (Dwarf Sumac, NL)
Robinia pseudo-acacia (Black Locust, FACU-)
Rosa multiflora (Multiflora Rose, FACU)
Salix nigra (Black Willow, FACW+)
Sambucus canadensis (Common Elderberry, FACW-)
Sassafras albidum (Sassafras, FACU-)
Smilax glauca (Catbrier, FACU)
Spartina alterniflora (Smooth Cordgrass, OBL)
Toxicodendron radicans (Poison Ivy, FAC)
Viburnum dentatum (Arrow-wood, FAC)

- OBL A plant species that is generally (>99% of the time) found only in wetlands under natural conditions.
 FACW A plant species that usually (>66% to 99% of the time) is found in wetlands, but which may be found occasionally in uplands under natural conditions.
 FAC A plant species that sometimes (>33% to 66% of the time) is found in wetlands, but which may also be found commonly in uplands.
 FACU A plant species that is seldom (<33% of the time) found in wetlands and that usually occurs in uplands.
 NA Currently no agreement as to indicator status.
 NC A plant species not classified (recent additions to indicator list).
 NL A plant species not listed.

note: A negative sign (-) indicates a species less frequently found in wetlands. A positive sign (+) indicates a species more frequently found in wetlands (Reed 1986).

Photographs of the Site
Wood-Ridge and Carlstadt Boroughs, Bergen County, New Jersey

(see locations and orientation of photographs on Plate 1)



Photograph #1. View of the upland forested area on the site.



Photograph #2. View of the upland area on the site.



Photograph #3. A downstream view of Berry's Creek from the railroad bridge. The site is on the right of the photograph.



Photograph #4. A view of the intertidal wetland along Berry's Creek upstream from the tide gate.



Photograph #5. A view of the tide gate across Berry's Creek. The site is on the left side of the photograph.



Photograph #6. The steep slope into the Berry's Creek Wetland. The pink flagging indicates the wetland boundary.



Photograph #7. View of Berry's Creek and the extensive wetland on Carlstadt, Lot 5. Lot 5 is on the right side of the photograph.



Photograph #8. A downstream view of the intermittent stream corridor on lot 5.

APPENDIX I

Soil Logs Recorded on the site

Wood-Ridge and Carlstadt Boroughs, Bergen County, New Jersey

by

Shisler Environmental Consultants, Inc.

(Note: Soil logs are numbered 1-4,6)

SOIL LOG SHEET

SHISLER ENVIRONMENTAL CONSULTANTS, INC.
23 Running Brook Drive
Perrineville, NEW JERSEY 08520

Boring Number: Orange #1 WD-3
Date: 22 May 1997
Site: Wood-Ridge Site, Bergen County
Location: along Berry's Creek, wetland side
Soil Series: Mapped: Udorthents Possible: Muck
Method: 3 3/4 inch soil auger
Depth to Saturation: surface
Standing Water Level: surface
Hydric soil: YES Logged by: J.K. Shisler

Depth (inches)	Soil Profile
0 - 24	Black (10YR 2/1) silt

Vegetation:

Trees: NONE

Shrubs: NONE

Herbs: *Impatiens capensis* (Jewelweed, FACW)

Vines: NONE

Hydrological Features:

Waterborne Debris

Waterstains

Saturation

825930024

SOIL LOG SHEET

SHISLER ENVIRONMENTAL CONSULTANTS, INC.
23 Running Brook Drive
Perrineville, NEW JERSEY 08520

Boring Number: Orange #2 WD-3
Date: 22 May 1997
Site: Wood-Ridge Site, Bergen County
Location: along Berry's Creek, upland side
Soil Series: Mapped: Udorthents Possible: Fill
Method: 3 3/4 inch soil auger
Depth to Saturation: > 24 inches
Standing Water Level: > 24 inches
Hydric soil: NO Logged by: J.K. Shisler

Depth (inches)	Soil Profile
0 - 24	Fill material, bricks, concrete, rocks on surface Dark reddish brown (5YR 2.5/2)

Vegetation:

Trees: *Ailanthus altissima* (Tree of Heaven, NL)
Shrubs: NONE
Herbs: *Polygonum cuspidatum* (Japanese Knotweed, FACU)
Vines: NONE
Hydrological Features:
NONE

825930025

SOIL LOG SHEET

SHISLER ENVIRONMENTAL CONSULTANTS, INC.
23 Running Brook Drive
Perrineville, NEW JERSEY 08520

Boring Number: Orange #3 WD-27
Date: 22 May 1997
Site: Wood-Ridge Site, Bergen County
Location: along intermittent corridor, upland side
Soil Series: Mapped: Udorthents Possible: Fill
Method: 3 3/4 inch soil auger
Depth to Saturation: > 24 inches
Standing Water Level: > 24 inches
Hydric soil: NO Logged by: J.K. Shisler

Depth (inches)	Soil Profile
0 - 24	Fill material, concrete, bottles, drum Very dark brown (10YR 2/2) loam

Vegetation:

Trees: *Ailanthus altissima* (Tree of Heaven, NL) (dead)
Prunus serotina (Black Cherry, FACU)

Shrubs: NONE

Herbs: *Impatiens capensis* (Jewelweed, FACW)
Phragmites australis (Common Reed, FACW)
Phytolacca americana (Pokeweed, FACU +)

Vines: *Vitis labrusca* (Fox Grape, FACU)

Hydrological Features:
NONE

825930026

SOIL LOG SHEET

SHISLER ENVIRONMENTAL CONSULTANTS, INC.
23 Running Brook Drive
Perrineville, NEW JERSEY 08520

Boring Number: Orange #4 WD-27
Date: 22 May 1997
Site: Wood-Ridge Site, Bergen County
Location: along intermittent stream corridor, wetland side
Soil Series: Mapped: Udorthents Possible: Muck
Method: 3 3/4 inch soil auger
Depth to Saturation: surface
Standing Water Level: surface
Hydric soil: YES Logged by: J.K. Shisler

Depth (inches)	Soil Profile
0 - 24	Black (10YR 2/1) silt

Vegetation:

Trees: NONE

Shrubs: NONE

Herbs: *Phragmites australis* (Common Reed, FACW)

Vines: NONE

Hydrological Features:

Waterborne Debris
Waterstains
Saturation

825930027

SOIL LOG SHEET

SHISLER ENVIRONMENTAL CONSULTANTS, INC.
23 Running Brook Drive
Perrineville, NEW JERSEY 08520

Boring Number: Orange #6 WD-46
Date: 22 May 1997
Site: Wood-Ridge Site, Bergen County
Location: along wetland boundary, wetland side
Soil Series: Mapped: Udorthents Possible: Muck
Method: 3 3/4 inch soil auger
Depth to Saturation: surface
Standing Water Level: surface
Hydric soil: YES Logged by: J.K. Shisler

Depth (inches)	Soil Profile
0 - 18	Brown (7.5YR 5/2) sandy silt

Vegetation:

Trees: NONE

Shrubs: *Cornus amomum* (Silky Dogwood, FACW)

Herbs: *Panicum virgatum* (Switchgrass, FAC)
Phragmites australis (Common Reed, FACW)

Vines: NONE

Hydrological Features:
Waterborne Debris
Waterstains
Saturation

825930028

APPENDIX II
Resume of Joseph K. Shisler Ph.D.



JOSEPH K. SHISLER, Ph.D.

**23 Running Brook Drive
Perrineville, New Jersey 08535
Consultation: (732) 446-3669
Fax (732) 446-2381
email shisenv@bellatlantic.net**

EDUCATION:

1975 Ph.D. Zoology, Rutgers University, N.J.
1970 M.A. Environmental Education, Glassboro State College, N.J.
1965 B.S. Biology, Lenoir-Rhyne College, N.C.

President of Shisler Environmental Consultants, Inc., Perrineville, NJ. Formerly at Rutgers University for over 15 years where he directed research on the management of wetlands, stormwater management and wetland mitigation. Dr. Shisler has been a consultant to the various state, federal and international agencies concerning wetlands and stormwater management issues and has published over 125 papers on the subject. Dr. Shisler's work was recognized by the New Jersey Wildlife Society who presented him with the 1980 Conservationist of the Year. Dr. Shisler has completed an evaluation of the wetlands on Staten Island for the New York Department of Environmental Conservation. Governor Kean appointed him chairperson of the newly formed New Jersey Wetlands Mitigation Council in 1989.

Invited participant in workshops concerned with Wetland Management, Mosquito Control, Dredge Disposal, Wildlife Management, Coastal Zone, Flood Plain Management and Stormwater Management.

PROFESSIONAL BACKGROUND:

1991-Present

President of Shisler Environmental Consultants, Inc.
23 Running Brook Drive, Perrineville, New Jersey 08535

1983-1991

Vice-President and Partner of Environmental Connection, Inc.
6 Throckmorton Street, Freehold, New Jersey 07728

1975-1988

Associate Research Professor
Mosquito Research and Control, Rutgers University, New Brunswick, N.J. 08903

PUBLICATIONS:

Published over 100 scientific papers in various periodicals.

PRESENTATIONS:

Presented over 150 scientific papers at various state national and international meetings.

23 RUNNING BROOK DR

PERRINEVILLE, NJ, 08535

732 446 3669

FAX 732 446 2381

email: shisenv@bellatlantic.net

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EXPERT WITNESS

Dr. Shisler has been qualified as an expert witness in various environmental fields including wetland delineations and management, wildlife management, ecology, stormwater management issues, environmental impact assessments, and pest management by various Municipal and County Planning Boards and Environmental Commissions including the following:

Aberdeen Township
Atlantic Highlands
Bernards Township
East Windsor Township
Franklin Township
Freehold Township
Galloway Township
Helmetta
Hightstown
Holmdel Township
Howell Township
Manalapan Township

Marlboro Township
Middletown Township
Millstone Township
Monroe Township
Morris County
Old Bridge Township
Spotswood
Tinton Falls Township
Washington Township
Upper Freehold Township
South River

TEACHING

Dr. Shisler has served as a faculty member of Rutgers University and as an adjunct faculty member at the University of South Carolina and Trenton State College.

Dr. Shisler has participated in a number of short courses for professionals including:

Office of Continuing Professional Education, Cook College, Rutgers University, New Brunswick, New Jersey

Stormwater Management for Engineers: 1984-1989
Sediment and Erosion Control: Planning, Design, and Application: 1986, 1987
Identification of New Jersey Wetlands: 1987, 1988
Coastal Zone Management: 1987
Stream Encroachment: 1989
Wetlands of the Northeast: 1989, 1990
Wetland Law and Regulations: 1992, 1994, 1995, 1996
Wetlands Mitigation: 1990, 1991
Wetlands Ecology: 1990, 1991

* Faculty Coordinator

The National Wetland Science Training Cooperative, L.C. Lee & Associates, Inc., Seattle, WA

Jurisdictional Delineation of Wetlands in the Mid-Atlantic States
1988 & 1989: New Brunswick, New Jersey
1990: Annapolis, Maryland
Constructed Wetlands for Stormwater Management:
1991: Seattle, Washington

Executive Enterprises, Inc., New York, New York

Wetlands Regulations and Delineation, Washington, DC 1991
Wetlands: Delineation, Mitigation, and Permitting Procedures, Washington, DC 1992

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CONSULTANCY WITH STATE AND FEDERAL AGENCIES:

U.S. Dept. of State - Agency for International Development

Overseas consultant to the US-AID antimalarial project in Zaire.

Invited participant and chairperson of the Water and Weed Management and Source Reduction Section for the Workshop "Comprehensive Vector Control - Current Status and Research Needs".

U.S. Dept. of Interior - Park Service

Evaluated the development of a comprehensive mosquito control program for Cape Cod National Park.

U.S. Environmental Protection

Wetlands mitigation in the northeastern United States.

Problem species associated with wetland mitigation.

Planning for 1990 Wetland Research.

International Irrigation Management Institute Kandy, Sri Lanka, Environmental Management for vector control.

NJ Dept. of Health

Mammal trapping and habitat identification consultant for possible vectors of Lyme disease.

ADJUNCT FACULTY:

University of South Carolina, College of Health, The International Center of Public Health Research

AFFILIATIONS:

Association of State Wetland Managers
Atlantic Estuarine Research Society
Ecological Society of America
Estuarine Research Federation
National Association of Environmental Professionals
New Jersey Academy of Science
New Jersey Wildlife Society
Society of Ecological Restoration
Society of Wetland Scientists
The Wildlife Society

ADVISORY BOARDS:

American Wetland Research Foundation, Inc. (1985-present)
New Jersey Builders Association Environmental Committee (1991-1992)
New Jersey Stormwater Technical Working Group (1979-1981)
New Jersey Stormwater Management Technical Committee (1991-1992)
New Jersey Wetlands Mitigation Council (1988-present Chairperson)
Public Service Electric and Gas, Management Plan Advisory Committee (1995-present)

CERTIFICATIONS:

USEPA-Accredited Asbestos Building Inspector (1988-1992)
USEPA-Accredited Asbestos Management Planner (1988-1992)
OSHA 40-hr Hazardous Site Training (1994-present)

PERMITS:

U.S. Fish and Wildlife Service Master Bird Banding Permit (1975-1985)
Banding Permit (1975-1985)

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